

- AQUACULTURE
- AGRICULTURAL LABOR
- FERTILIZER CONSUMPTION



## AQUACULTURE: Number of operations, production, and value, by counties, 1996-2000

Year	Number of operations	Production			Value				
		Shellfish <sup>1</sup>	Finfish	Algae	Shellfish	Finfish	Algae	Other <sup>2</sup>	Total
----- 1,000 pounds ----- 1,000 dollars -----									
State									
1996	117	616.8	129.2	1,245.9	4,315.5	1,191.6	9,082.4	1,066.2	15,655.7
1997	110	NA	NA	NA	4,960.0	950.0	8,295.0	2,395.0	16,600.0
1998	105	700.4	218.0	1,324.7	4,959.9	958.0	8,294.9	2,406.9	16,619.7
1999	100	996.0	215.0	1,193.0	6,393.0	1,010.0	7,883.0	2,816.0	18,102.0
2000	85	1,190.0	440.0	1,268.0	7,677.0	2,302.0	8,447.0	3,744.0	22,170.0
Counties:									
Hawaii									
1996	43	432.8	66.6	1,113.1	3,188.7	764.9	8,779.1	464.6	13,197.3
1997	NA	NA	NA	NA	NA	NA	NA	NA	13,380.0
1998	44	485.3	44.8	<sup>3</sup>	3,647.5	<sup>3</sup>	<sup>3</sup>	1,476.4	13,382.5
1999	42	475.0	86.0	1,022.0	3,513.0	562.0	7,473.0	1,829.0	13,377.0
2000	37	450.0	<sup>3</sup>	1,035.0	3,571.0	<sup>3</sup>	7,953.0	<sup>3</sup>	16,009.0
Honolulu									
1996	44	124.0	47.5	132.8	776.8	373.9	303.3	601.6	2,055.6
1997	NA	NA	NA	NA	NA	NA	NA	NA	2,120.0
1998	46	<sup>3</sup>	130.5	<sup>3</sup>	1,013.4	<sup>3</sup>	<sup>3</sup>	279.5	2,099.6
1999	44	222.0	114.0	<sup>3</sup>	1,370.0	408.0	<sup>3</sup>	241.0	2,333.0
2000	35	359.0	72.0	<sup>3</sup>	2,123.0	349.0	<sup>3</sup>	<sup>3</sup>	2,985.0
Kauai									
1996	11	NA	NA	NA	NA	NA	NA	NA	NA
1997	NA	NA	NA	NA	NA	NA	NA	NA	<sup>3</sup>
1998	3	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
1999	4	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
2000	4	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
Maui									
1996	19	60.0	15.1	NA	350.0	52.8	NA	NA	402.8
1997	NA	NA	NA	NA	NA	NA	NA	NA	<sup>3</sup>
1998	12	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
1999	10	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>
2000	9	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>	<sup>3</sup>

NA = Not available.

<sup>1</sup> Some shellfish products sold by pieces, pounds not given.

<sup>2</sup> Non-food products: ornamental fish, seed stock, other. Items not sold by weight.

<sup>3</sup> Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

Source: 1995, 1996, and 1997 Hawaii State Department of Agriculture, Aquaculture Development Program.

# LABOR

## AGRICULTURAL LABOR: Workers on farms, annual and quarterly averages, State of Hawaii, 1996-2000<sup>1</sup>

Year	Total farm employment			Hired workers by type of farm		
	Self-employed farm operators	Unpaid workers <sup>2</sup>	Hired workers <sup>3</sup>	Sugar	Pineapple	Other
1996	2,700	1,000	7,400	1,400	1,200	4,800
1997	2,700	1,200	7,000	1,200	1,300	4,500
1998	2,700	1,200	7,400	1,200	1,200	5,000
1999	3,000	1,200	7,600	1,200	1,300	5,200
<b>2000</b>	<b>3,100</b>	<b>1,000</b>	<b>7,800</b>	<b>1,000</b>	<b>1,200</b>	<b>5,600</b>
January	3,300	1,000	8,100	1,050	1,100	5,950
April	2,900	900	7,300	1,050	1,100	5,150
July	3,100	1,000	8,100	1,000	1,300	5,800
October	3,000	1,000	7,800	1,000	1,150	5,650

<sup>1</sup> Averages are based on data collected from the January, April, July, and October surveys.

<sup>2</sup> Includes family members and others working 15 or more hours per week.

<sup>3</sup> Sum of hired workers by type of farm may not add to hired workers total due to rounding.

## AGRICULTURAL LABOR: Annual average number of workers on farms, by counties, 1996-2000<sup>1</sup>

Year	Self-employed farm operators	Unpaid workers <sup>2</sup>	Hired workers	Year	Self-employed farm operators	Unpaid workers <sup>2</sup>	Hired workers
<b>Counties:</b>							
<b>Hawaii</b>				<b>Kauai</b>			
1996	1,800	600	2,600	1996	200	100	1,000
1997	1,800	700	2,450	1997	200	100	850
1998	1,750	650	2,550	1998	200	100	800
1999	1,850	600	2,400	1999	250	100	900
<b>2000</b>	<b>1,800</b>	<b>550</b>	<b>2,700</b>	<b>2000</b>	<b>300</b>	<b>50</b>	<b>950</b>
<b>Honolulu</b>				<b>Maui</b>			
1996	450	200	2,000	1996	300	150	1,850
1997	500	300	1,900	1997	300	100	1,850
1998	450	250	2,100	1998	350	150	1,950
1999	500	300	2,100	1999	450	200	2,200
<b>2000</b>	<b>500</b>	<b>200</b>	<b>2,200</b>	<b>2000</b>	<b>500</b>	<b>150</b>	<b>2,000</b>

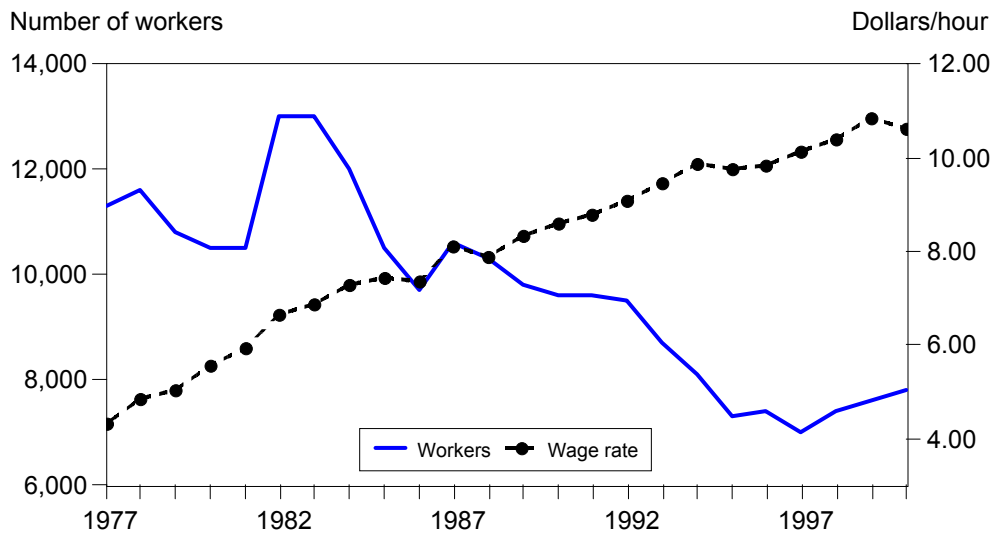
<sup>1</sup> Averages are based on data collected from the January, April, July, and October surveys.

<sup>2</sup> Includes family members and others working 15 or more hours per week.

**AGRICULTURAL LABOR: Wage rates by type of work, annual and quarterly averages, State of Hawaii, 1996-2000**

Year	Type of work performed			
	All farms		Farms with 1-9 workers	
	Field/livestock	All hired workers	Field/livestock	All hired workers
1996	8.62	9.83	6.95	7.50
1997	8.83	10.15	6.82	7.65
1998	8.97	10.41	7.27	8.03
1999	9.38	10.87	7.76	8.63
<b>2000</b>	<b>9.05</b>	<b>10.62</b>	<b>7.69</b>	<b>8.65</b>
January	8.90	10.40	7.55	8.25
April	9.14	10.58	8.02	9.19
July	9.09	10.76	7.58	8.33
October	9.07	10.73	7.67	8.97

**Hired Work Force and Average Wage Rate, State of Hawaii, 1977-2000**



Number of workers is average of January, April, July, and October surveys, except 1981 January and April, 1982-83 July and 1984 July and October.

HASS

# FERTILIZER

## FERTILIZER: Commercial consumption, State of Hawaii, 1996-2000

Type	Year ending June 30				
	1996	1997	1998	1999	2000 <sup>1</sup>

### Consumption of fertilizers by class - Short tons of material

Total fertilizer	109,478	109,478	112,762	98,103	<b>90,000</b>
Total dry single-nutrient	28,423	28,423	29,275	25,470	<b>23,366</b>
Total dry multiple-nutrient	32,936	32,936	33,924	29,514	<b>27,076</b>
Fluid single-nutrient	25,583	25,583	26,350	22,925	<b>21,031</b>
Fluid multiple-nutrient	18,392	18,392	18,943	16,481	<b>15,119</b>
Total single-nutrient	54,005	54,005	55,625	48,394	<b>44,397</b>
Total multiple-nutrient	51,328	51,328	52,868	45,995	<b>42,196</b>
Total N	16,828	16,828	17,333	15,080	<b>13,834</b>
N in multi-nutrients	6,786	6,786	6,990	6,081	<b>5,579</b>
Total available P <sub>2</sub> O <sub>5</sub>	5,719	5,719	5,890	5,125	<b>4,701</b>
Available P <sub>2</sub> O <sub>5</sub> in multi-nutrients	5,608	5,608	5,776	5,025	<b>4,610</b>
Total K <sub>2</sub> O	12,991	12,991	13,381	11,641	<b>10,680</b>
K <sub>2</sub> O in multi-nutrients	9,006	9,006	9,276	8,071	<b>7,404</b>
Total plant nutrients	35,538	35,538	36,604	31,845	<b>29,215</b>
Average analysis	33.7	33.7	33.7	33.7	<b>33.7</b>
Total in multi-nutrients	21,400	21,400	19,177	19,177	<b>17,593</b>

### Selected single-nutrient materials - Short tons of material

Nitrogen solutions	18,236	18,236	18,783	16,341	<b>14,991</b>
Urea	2,480	2,480	2,554	2,222	<b>2,038</b>
Ammonium sulfate	15,285	15,285	15,744	13,697	<b>12,566</b>
Secondary and micronutrients	4,144	4,144	4,269	3,714	<b>3,407</b>

### Consumption of multiple-nutrient fertilizers - Short tons of material

N-P-K	45,031	45,031	46,382	40,353	<b>37,019</b>
N-P	6,297	6,297	6,485	5,642	<b>5,176</b>

Source: The Association of American Plant Food Control Officials and the Fertilizer institute.

<sup>1</sup> An estimate of the total tonnage for 2000 was set equal to 92% of the 1999 tonnage based on information provided by industry representatives. The total tonnage was proportioned into the tonnage for the individual materials and grades in the same ratio as in the original TVA estimate. The specific materials and grades reported are based on a TVA estimate from about 1989 that have been carried forward and adjusted each year as above.

## DEFINITION OF TERMS

**AGRICULTURE** entails all operations performed on a "farm" in connection with planting, growing, and harvesting of crops; raising and feeding of livestock and poultry, and management. All operations in connection with preparation of farm products for market where the preparation does not alter the form of the product and transportation to the first delivery point. In Hawaii, the first delivery point is defined as the processing plant or packinghouse door or other receivers' establishment for marketings on the island of production. For off-island marketings, the first delivery point is generally the shipper's warehouse.

**FARM** is a place with estimated (or expected) annual sales of agricultural products of at least \$1,000.

**CROP PRODUCTION** is the estimated amount of crop harvested and transferred at the first delivery point. Production estimates of vegetables and fruits include the quantity for fresh market and processing use.

**ACREAGE IN CROP** is the total acreage standing in a specific crop regardless of age or condition unless it has been declared abandoned by the operator.

**ACREAGE HARVESTED** is the total area harvested or partially harvested during the reporting period. A permanent or semi-permanent planting that was harvested for only a portion of the year is counted in its entirety. Acreage lost before maturity due to natural or economic factors is not included. Acreage harvested and planted repeatedly during the year is counted each time.

**YIELD** is the average production per acre of merchantable quality harvested and sold or utilized. This is derived by dividing total production by harvested acres.

**LIVESTOCK OPERATION** is defined as a place that has one or more head of the species on hand at any time during the year. It does not have to meet the definition of a farm.

**LIVESTOCK PRODUCTION** is the estimated amount of livestock and livestock products sold. This includes allowance for amount used on farms where produced.

**FARM PRICE** is a computed price to value agricultural production which may or may not reflect the average price at which actual transfer of ownership took place but which is comparable with the definition of "agriculture". See "agriculture" for the definition of pricing point.

**MARKET SUPPLY** includes pounds of product sold in Hawaii to both Armed Forces and civilians (outshipments excluded) plus products shipped in for civilian use. Direct inshipments to the Armed Forces are excluded.

## SAMPLING METHODS AND ESTIMATION

The Hawaii Agricultural Statistics Service uses a variety of sampling techniques to produce current agricultural statistics about crops, livestock, prices, farm labor, and other information relating to the agricultural economy.

Data is collected, summarized and estimates are prepared. These estimates then pass through the Agricultural Statistics Board of the U. S. Department of Agriculture where, for major items, Hawaii estimates become part of National totals and enter the official data base for agriculture. National and State estimates are published according to a schedule set one year in advance.

The Hawaii Agricultural Statistics Service conducts many of its surveys by virtually complete **ENUMERATION** of certain parts of the population. This is unusual compared to procedures in other states but is feasible in Hawaii due to the relatively small size of certain categories of the farm universe or the extreme concentration of ownership.

**LIST SAMPLING** is a common means of data collection. Lists of farm operators are well suited for the low cost collection of information by mail. Supplementary information is included within the frame that allows the use of efficient stratified sample designs. A major disadvantage of this method is the constant change in the list frame which can never be perfect. In Hawaii, cattle, hog, macadamia nut and coffee surveys are examples of stratified list sample designs.

**AREA FRAME SAMPLING** can be used alone or in conjunction with the list frame. The frame consists of an aggregation of identifiable units of land or segments which may be sampled. The frame is complete and does not suffer the type of deterioration over time as does a list frame.

**MULTIPLE-FRAME SAMPLING** is the use of two frames. It takes advantage of the best attributes of the area frame and the list frame, produces unbiased estimates and allows measurement of the sampling error.

**OBJECTIVE YIELD SURVEYS** provide information from direct counts, measurements and weights of the crop made from small plots in a probability selection of sample fields.

**ADMINISTRATIVE DATA** is used in addition to producer surveys to establish final production and marketings. These include processor receipts, slaughter, vacuum cooler volume, and inspections. Unloads at Honolulu and wholesale prices as reported by the Market Analysis and News Branch, are an important check data source.

# REPORTS

Title and Description	Release date
<b>CROPS</b>	
<b>AVOCADOS:</b> Annual summary of acreage, yield, production, farm price, and value .....	May
<b>BANANAS:</b>	
- Monthly report on sales, farm price, and production forecast .....	Last week of the month
- Annual summary of acreage, yield, production, farm price, and value .....	May
<b>COFFEE:</b>	
- Preliminary season estimates of acreage, yield, production, farm price, and value .....	December
- Final season estimates of acreage, yield, production, farm price, and value .....	August
<b>FRUITS:</b>	
- Annual summary of fresh and processed fruit production, acreage, farm price, and value .....	September
- Annual summary of tropical specialty fruits - acreage, production, and value .....	August
<b>GINGER ROOT:</b> Annual summary of acreage, yield, production, farm price, and value. Planting intentions for next season .....	August
<b>GUAVAS:</b> Annual summary of acreage, yield, production, farm price, and value .....	June
<b>HERBS:</b> Annual summary of fresh production, farm price, and value .....	June
<b>MACADAMIA NUTS:</b>	
- Preliminary season estimates of acreage, yield, production, farm price, and value .....	January
- Final season estimates of acreage, yield, production, farm price, and value .....	July
<b>PAPAYAS:</b> Data on acreage, utilization, and farm price .....	Mid-month
<b>PINEAPPLES:</b> Annual summary of acreage, production, farm price, and value .....	February
<b>SEED CROP:</b> Annual summary of acreage, outshipments of seed, and value .....	October
<b>SUGARCANE:</b> Estimates of acreage and production for all major U.S. producing areas .....	August-November
<b>TARO:</b>	
- Quarterly summary of taro milled for poi .....	Jan., Apr., Jul., Oct.
- Annual estimates of acreage in crop, production, and farm prices for Chinese and wetland taro varieties .....	April
<b>VEGETABLES:</b>	
- Monthly summary of acreage, sales, and farm price for selected major vegetables and melons. Includes forecast of production and harvested acreage .....	Second week of month
- Annual summary of acreage, production, and value for all vegetables and melons .....	July
<b>FLORICULTURE AND NURSERY PRODUCTS</b>	
<b>FLORICULTURE AND NURSERY PRODUCTS:</b> Annual summary of area, production, and value .....	June
<b>POINSETTIAS:</b> Fall report of plant inventory and past year sales .....	October
<b>LIVESTOCK</b>	
<b>LIVESTOCK REVIEW:</b> Monthly hog and cattle slaughter, cattle outshipment, pasture conditions, number of milk cows and milk production, number of layers and egg production, and farm prices .....	Last week of month
<b>CATTLE:</b> Annual report of inventory and calf crop as of January 1 .....	February
<b>HOGS:</b> Annual report of inventory and pig crop as of December 1 .....	January
<b>HONEY:</b> Annual summary of colonies, production, yield, farm price, and value .....	February
<b>OTHER PUBLICATIONS</b>	
<b>AQUACULTURE:</b> Summary of operations, production, and value .....	September
<b>CROP WEATHER:</b> Weekly comments on weather and crop conditions. Rainfall data for selected stations .....	First working day of week
<b>FARM LABOR:</b> Quarterly report on number of workers by type and average wage rates .....	Feb., May, Aug., Nov.
<b>STATISTICS OF HAWAII AGRICULTURE:</b> A statistical summary of the State's agricultural sector .....	October

To order: Any of the above reports may be obtained by contacting the Hawaii Agricultural Statistics Service, P.O. Box 22159, Honolulu, HI 96823-2159, (808) 973-9588. Most of our publications are available on the Internet at: <http://www.nass.usda.gov/hi/rlsetoc.htm>.



## Need More Information?

[www.usda.gov/nass/](http://www.usda.gov/nass/)

### Where can I get more statistics or economic analysis?

National Agricultural Statistics Service (NASS) publications include weekly, monthly, quarterly and annual estimates of production, stocks, inventories, dispositions, utilization and prices of agricultural commodities and other items. The Census of Agriculture is published every five years covering all commodities by state, county and zip code. Other census reports include the Agricultural Atlas, Agricultural Economics & Land Ownership, Aquaculture, Census History, Congressional Tabulations, Farm & Ranch Irrigation, Horticulture Specialties and Outlying Areas.

Economic Research Service (ERS) Situation and Outlook Reports and periodicals analyze the current situation and forecast market conditions. ERS monographs offer economic analysis in the area of trade, production, rural development, farm inputs and other topics.

The World Agricultural Outlook Board (WAOB) issues regular forecasts of U.S. and world supply and demand prospects for major agricultural commodities.

### How can I get National publications from NASS & ERS for all states?

→For Free E-mail Subscriptions send a message to [usda-reports@usda.mannlib.cornell.edu](mailto:usda-reports@usda.mannlib.cornell.edu) and type **lists** in the message.

→For a Free Catalog of Products and Services call 1-800-999-6779.

The NASS and ERS catalogs list all products and services available from each agency. The NASS catalog includes a calendar of publication dates for agricultural statistics reports throughout the year.

### How can I get State publications from NASS field offices?

→For Free E-mail Subscriptions send a message to [listserv@newsbox.usda.gov](mailto:listserv@newsbox.usda.gov) and in the body of the message (not the subject), type **subscribe usda-hawaii-all-reports** - other states are also available by typing **lists** in the body.

→For Paper Subscriptions use the order form in this book. For other states, call 1-800-727-9540.

Sources of Agricultural Information in USDA			
<b>USDA - NASS</b> Room 5829 South Building 1400 Independence Ave., SW Washington, D.C. 20250-2000	1-800-727-9540 FAX: 202-690-2090 AutoFax: 202-720-2000	Washington, D.C. E-mail: <a href="mailto:nass@nass.usda.gov">nass@nass.usda.gov</a> Hawaii E-mail: <a href="mailto:nass-hi@nass.usda.gov">nass-hi@nass.usda.gov</a> Other Field Offices E-mail: <a href="mailto:nass-xx@nass.usda.gov">nass-xx@nass.usda.gov</a> (xx is the state abbreviation) Internet: <a href="http://www.usda.gov/nass/">www.usda.gov/nass/</a>	
<b>USDA - ERS</b> Room N 3050 1800 M Street, NW Washington, D.C. 20036-5831		202-694-5050 FAX: 202-694-5689 AutoFax: 202-694-5700	E-mail: <a href="mailto:service@ers.usda.gov">service@ers.usda.gov</a> Internet: <a href="http://www.ers.usda.gov">www.ers.usda.gov</a>
<b>USDA - WAOB</b> Room 5143 South Building Mail Stop 3812 Washington, D.C. 20250-3812		202-720-5447 FAX: 202-690-1805	E-mail: <a href="mailto:rbridge@oce.usda.gov">rbridge@oce.usda.gov</a> Internet: <a href="http://www.usda.gov/oce/waob/index.htm">www.usda.gov/oce/waob/index.htm</a>
<b>Small Farm Program:</b> USDA - CSREES Economic and Community System, Stop 2215 800 9 <sup>th</sup> Street Washington, D.C. 20250-2215		1-800-583-3071 FAX: 202-690-3162	E-mail: <a href="mailto:smallfarm@reeusda.gov">smallfarm@reeusda.gov</a> Internet: <a href="http://www.reeusda.gov/smallfarm/">www.reeusda.gov/smallfarm/</a>
<b>Farmer Direct Marketing Initiative:</b> USDA - Wholesale and Alternative Markets P.O. Box 96456, Room 2649-S 1400 Independence Ave., SW Washington, D.C. 20090-6456		202-720-8317 FAX: 202-690-0031	E-mail: <a href="mailto:Errol.Bragg@usda.gov">Errol.Bragg@usda.gov</a> Internet: <a href="http://www.ams.usda.gov/directmarketing/">www.ams.usda.gov/directmarketing/</a>
<b>National specialists</b> are available to answer your question by phone or E-mail. See these Internet sites for telephone numbers and E-mail addresses:			
<b>Statistics from USDA, NASS</b>	Internet: <a href="http://www.usda.gov/nass/nassinfo/speccomm.htm">www.usda.gov/nass/nassinfo/speccomm.htm</a>		
<b>Economists in USDA, ERS</b>	Internet: <a href="http://www.ers.usda.gov">www.ers.usda.gov</a>		

# STATE STATISTICAL OFFICES

## TO REQUEST DATA FROM THE OTHER STATISTICAL OFFICES, WRITE: (STATE) AGRICULTURAL STATISTICS SERVICE.

### ALABAMA

H. L. Vanderberry  
P.O. Box 240578  
Montgomery 36124  
(334) 279-3555

### ALASKA

S. Benz  
P.O. Box 799  
Palmer 99645  
(907) 745-4272

### ARIZONA

M. Pallesen  
3003 N. Central Ave.  
Suite 950  
Phoenix 85012  
(602) 280-8850

### ARKANSAS

B. F. Klugh  
2301 S. University Ave.  
Rm 103  
Little Rock 72204  
(501) 296-9926

### CALIFORNIA

V. Tolomeo  
P.O. Box 1258  
Sacramento 95812  
(916) 498-5161

### COLORADO

R. R. Liles  
P.O. Box 150969  
Lakewood 80215-0969  
(303) 236-2300

### DELAWARE

T. W. Feurer  
2320 S. Dupont Hwy.  
Dover 19901  
(302) 698-4537

### FLORIDA

J. D. Witzig  
P.O. Box 530105  
Orlando 32853  
(407) 648-6013

### GEORGIA

D. S. Abbe  
Stephens Federal Bldg.  
Suite 320  
Athens 30601

(706) 546-2236

### IDAHO

D. G. Gerhardt  
P.O. Box 1699  
Boise 83701  
(208) 334-1507

### ILLINOIS

B. Schwab  
P.O. Box 19283  
Springfield 62794-9283  
(217) 492-4295

### INDIANA

R. W. Gann  
1148 AGAD Bldg.  
Rm. 223  
Purdue University  
West Lafayette 47907  
(765) 494-8371

### IOWA

J. K. Sands  
833 Federal Bldg.  
210 Walnut St.  
Des Moines 50309  
(515) 284-4340

### KANSAS

E. J. Thiessen  
P.O. Box 3534  
Topeka 66601  
(785) 233-2230

### KENTUCKY

L. E. Brown  
P.O. Box 1120  
Louisville 40201  
(502) 582-5293

### LOUISIANA

A. D. Frank  
P.O. Box 65038  
Baton Rouge 70896  
(225) 922-1362

### MARYLAND

R. Garibay  
50 Harry S. Truman  
Pkwy. Suite 202  
Annapolis 21401  
(410) 841-5740

### MICHIGAN

D. D. Kleweno  
P.O. Box 26248  
Lansing 48909  
(517) 324-5300

### MINNESOTA

M. A. Hunst  
P.O. Box 7068  
St. Paul 55107  
(651) 296-2230

### MISSISSIPPI

T. L. Gregory  
P.O. Box 980  
Jackson 39205  
(601) 965-4575

### MISSOURI

G. Danekas  
P.O. Box L  
Columbia 65205  
(573) 876-0950

### MONTANA

P. Stringer  
301 S. Park Federal  
Bldg.  
Helena 59626  
(406) 441-1240

### NEBRASKA

W. Hamlin  
P.O. Box 81069  
Lincoln 68501  
(402) 437-5541

### NEVADA

M. J. Owens  
P.O. Box 8880  
Reno 89507  
(775) 784-5584

### NEW HAMPSHIRE<sup>1</sup>

A. R. Davis  
P.O. Box 1444  
Concord 03302  
(603) 224-9639

### NEW JERSEY

B. Cross  
CN-330 New Warren St.  
Rm 205  
Trenton 08625  
(609) 292-6385

### NEW MEXICO

D. Nelson  
P.O. Box 1809  
Las Cruces 88004  
(505) 522-6023

### NEW YORK

S. C. Ropel  
1 Winners Circle  
Albany 12235  
(518) 457-5570

### NORTH CAROLINA

R. M. Murphy  
P.O. Box 27767  
Raleigh 27611  
(919) 856-4394

### NORTH DAKOTA

L. W. Beard  
P.O. Box 3166  
Fargo 58108  
(701) 239-5306

### OHIO

J. E. Ramey  
P.O. Box 686  
Reynoldsburg 43068  
(614) 728-2100

### OKLAHOMA

B. L. Bloyd  
P.O. Box 528804  
Oklahoma City 73152  
(405) 522-6190

### OREGON

J. A. Goodwin  
1735 Federal Bldg.  
1220 S. W. Third Ave.  
Portland 97204  
(503) 326-2131

### PENNSYLVANIA

M. Tosiano  
2301 N. Cameron St.  
Rm. G-19  
Harrisburg 17110  
(717) 787-3904

### SOUTH CAROLINA

R. A. Graham  
P.O. Box 1911  
Columbia 29202  
(803) 765-5333

### SOUTH DAKOTA

C. Anderson  
P.O. Box 5068  
Sioux Falls 57117  
(605) 330-4235

### TENNESSEE

D. Kenerson  
P.O. Box 41505  
Nashville 37204-1505  
(615) 781-5300

### TEXAS

R. O. Roark  
P.O. Box 70  
Austin 78767  
(512) 916-5581

### UTAH

D. J. Gneiting  
P.O. Box 25007  
Salt Lake City 84125  
(801) 524-5003

### VIRGINIA

S. A. Manheimer  
P.O. Box 1659  
Richmond 23218  
(804) 771-2493

### WASHINGTON

D. A. Hasslen  
P.O. Box 609  
Olympia 98507  
(360) 902-1940

### WEST VIRGINIA

D. King  
1900 Kanawha Blvd. E  
Charleston 25305  
(304) 345-5958

### WISCONSIN

R. J. Battaglia  
P.O. Box 8934  
Madison 53708  
(608) 224-4848

### WYOMING

D. W. Coulter  
P.O. Box 1148  
Cheyenne 82003  
(307) 432-5600

<sup>1</sup> Includes Connecticut, Maine, Massachusetts, Rhode Island, and Vermont.

## INDUSTRY ASSOCIATIONS

### ANTHURIUM

(808) 988-7203

Hawaiian Anthurium Industry Association  
P.O. Box 4755  
Hilo, HI 96720  
(808) 965-8307

### AQUACULTURE

Hawaii Aquaculture Association  
Aquaculture Development Program  
1177 Alakea St. Rm 400  
Honolulu, HI 96813  
(808) 587-0030

### AVOCADO

Hawaii Avocado Association  
P.O. Box 925  
Kealahou, HI 96750  
(808) 885-6960

### AWA (KAWA)

Association for Hawaiian Awa  
P.O. Box 636  
Pepeekeo, HI 96783  
(808) 969-7079

Hawaii Awa Council  
P.O. Box 262  
Kurtistown, HI 96760  
(808) 968-6237

### BANANA

Hawaii Banana Industry Association  
421 Lama St.  
Hilo, HI 96720  
(808) 959-4176

### BEEKEEPERS

Big Island Beekeepers Association  
P.O. Box 430  
Papaikou, HI 96781  
(808) 964-5401

Hawaii Beekeepers Association  
3081 G Paty Drive  
Honolulu, HI 96822

### CATTLE

Hawaii Beef Industry Council  
P.O. Box 1166  
Ewa Beach, HI 96706  
(808) 672-5042

### COFFEE

Kona Coffee Council  
P.O. Box 2077  
Kealahou, HI 96750  
(808) 328-9548

Kona Pacific Farmers Cooperative  
P.O. Box 309  
Captain Cook, HI 96704  
(808) 328-2411

Hawaii Coffee Association  
P.O. Box 8  
Elele, HI 96705  
(808) 335-5497

### CROP IMPROVEMENT

Hawaii Crop Improvement Association  
P.O. Box 645  
Kihei, HI 96753  
(808) 879-4074

### EGG

Hawaii Egg Producers Association  
C/O 850 Davies Pacific Tower  
841 Bishop St. Suite 850  
Honolulu, HI 96813  
(808) 668-2359

### FARM (General)

Hawaii Farm Bureau Federation  
2343 Rose St.  
Honolulu, HI 96819  
(808) 848-2074

### FLOWERS & NURSERY

Big Island Association of Nurserymen  
P.O. Box 4365  
Hilo, HI 96720

Big Island Dendrobium Growers  
Association of Hawaii (BIDGA)  
P.O. Box 4153  
Hilo, HI 96720  
(808) 935-9060

Dendrobium Orchid Growers  
Association of Hawaii (DOGAH)  
P.O. Box 1324.  
Wahiawa, HI 96786

Hawaii Association of Nurserymen  
938 Kamilonui Pl.  
Honolulu, HI 96825  
(808) 395-9811

Hawaii Export Nursery Association  
P.O. Box 11120  
Hilo, HI 96721  
(808) 969-2088

Hawaii Florists and Shippers Association  
P.O. Box 5640  
Hilo, HI 96720  
(808) 935-1484

Hawaii Tropical Flowers Council  
P.O. Box 4306  
Hilo, HI 96720  
(808) 966-7427

Hawaii Tropical Flowers Foliage  
Association  
P.O. Box 817  
Kaneohe, HI 96744  
(808) 735-4601

Hawaii Turfgrass Association  
1085 S. Beretania St. Suite 203  
Honolulu, HI 96814  
(808) 545-2257

## INDUSTRY ASSOCIATIONS - Continued

### FLOWERS & NURSERY - Continued

Landscape Industry Council of Hawaii  
P.O. Box 661  
Kaneohe, HI 96744  
(808) 239-5455

Maui Flower Growers Association  
P. O. Box 684  
Hana, HI 96713  
(808) 878-6351

Protea Growers Association of Hawaii  
P.O. Box 425  
Kula, HI 96790  
(808) 878-1211

West Hawaii Orchid Growers  
Association (WHOGA)  
P.O. Box 1540  
Kailua-Kona, HI 96745  
(808) 329-8455

### FOREST

Hawaii Forest Industry Association  
P.O. Box 10216  
Hilo, HI 96721  
(808) 933-9411

### GINGER

Hawaii Ginger Commodity Group  
Association  
P.O. Box 678  
Kurtistown, HI 96760  
(808) 966-7584

### HERBS

Hawaii Herb Association  
C/O Hawaii Farm Bureau  
2343 Rose St.  
Honolulu, HI 96819

### MACADAMIA NUT

Hawaii Macadamia Nut Association  
P.O. Box 2092  
Keaau, HI 96749  
(808) 965-5444

### MILK

Fresh Milk Industry of Hawaii  
P.O. Box 190  
Hawi, HI 96719  
(808) 889-5978

### ONION

Maui Onion Growers Association  
P.O. Box 148  
Kula, HI 96790  
(808) 870-8941

### ORGANIC PRODUCE

Hawaii Organic Farmers Association  
P.O. Box 6863  
Hilo, HI 96720  
(808) 969-7789

### PAPAYA

Papaya Administrative Committee  
230 Kekuanaoa St.  
Hilo, HI 96720  
(808) 969-1160

Hawaii Papaya Industry Association  
P.O. Box 537  
Pahoa, HI 96778  
(808) 965-8699

### PINEAPPLE

Pineapple Growers Association of  
Hawaii  
1116 Whitmore Ave.  
Wahiawa, HI 96786

(808) 621-1220

### PORK

Hawaii Pork Industry Association  
C/O Hawaii Food Products  
94-403 Ukee St.  
Waipahu, HI 96797  
(808) 676-9100

### POULTRY

Hawaii Fryer's Council  
C/O Pacific Poultry Co.  
1818 Kananui St.  
Honolulu, HI 96819  
(808) 841-2828

### TARO

Kauai Taro Growers Association  
P.O. Box 427  
Hanalei, HI 96714  
(808) 826-6202

### TROPICAL FRUITS

Hawaii Tropical Fruit Growers  
P.O. Box 1582  
Hilo, HI 96721  
(808) 640-0035

### VEGETABLE

Kamuela Farmers Cooperative  
Association  
P.O. Box 25  
Kamuela, HI 96743  
(808) 885-4913

Maui Farmer's Cooperative Exchange  
970 B Lower Main St.  
Wailuku, HI 96793  
(808) 242-9767

## COOPERATIVE EXTENSION SERVICE COUNTY OFFICES AND USDA FARM SERVICE AGENCIES

Cooperative Extension Service  
Hawaii County Office  
875 Komohana St.  
Hilo, HI 96720  
(808) 959-9155

Cooperative Extension Service  
Kamuela Office  
67-5189 Kamamalu St.  
Kamuela, HI 96743  
(808) 887-6183

Cooperative Extension Service  
Kona Office  
79-7381 Mamalahoa Hwy  
Kealahakua, HI 96750-7911  
(808) 322-4892

Cooperative Extension Service  
Maui Office  
310 Kaahumanu Ave. Bldg. 214  
Kahului, HI 96732  
(808) 244-3242

Cooperative Extension Service  
Molokai Office  
PO Box 394  
Hoolehua, HI 96729  
(808) 567-6929

Cooperative Extension Service  
Kauai County Office  
3060 Eiwa St. Rm 210  
Lihue, HI 96766  
(808) 274-3471

Cooperative Extension Service  
Wahiawa Office  
910 California Ave.  
Wahiawa, HI 96786  
(808) 622-4185

Cooperative Extension Service  
Kaneohe Office  
45-260 Waikalua Rd.  
Kaneohe, HI 96744  
(808) 247-0421

Cooperative Extension Service  
Pearl City Office  
962 2nd St.  
Pearl City, HI 96782  
(808) 453-6050

Cooperative Extension Service  
Oahu County Office  
1420 Lower Campus Rd.  
Honolulu, HI 96822  
(808) 956-7138

USDA Hawaii County FSA Office  
Room 219 & 221 Federal Bldg.  
154 Waiianuenue Ave.  
Hilo, HI 96720  
(808) 933-8381

USDA Maui County FSA Office  
Millyard Plaza  
210 Imi Kala St. Suite 207  
Wailuku, HI 96793  
(808) 244-3100

USDA Kauai County FSA Office  
Watumull Bldg.  
4334 Rice St. Rm 103  
Lihue, HI 96766  
(808) 245-9014

USDA Honolulu County FSA Office  
99-193 Aiea Heights Drive Suite 114  
Aiea, HI 96701  
(808) 483-8609

## PHOTOGRAPHY ACKNOWLEDGEMENTS

- Cover photo: Macadamia nut orchards, Island of Hawaii. Photo courtesy of the Hawaii Macadamia Nut Association and the Limtiaco Company.
- Fruits: Pineapple field, courtesy of HASS staff, page 35.
- Vegetable, Melon, and Taro: An assortment of tomatoes and green peppers, courtesy of HASS staff, page 46.
- Special Statistics: Planting pineapple slips, courtesy of HASS staff, page 85.